

children are boys, and 50% to 75% are under 2 years of age.<sup>2,4</sup>

Infants tend to have an acute illness lasting only 1 or 2 days, most often in the spring or summer; 85% to 90% have pain, 80% to 90% vomiting, 50% to 65% a palpable mass and 45% to 65% blood per rectum.<sup>2,4</sup> In adults the diagnosis is seldom made preoperatively; the signs and symptoms are more variable and tend to be less impressive and chronic, persisting often many months when due to benign disease, many weeks when due to primary malignant disease and perhaps several weeks when due to metastases in the bowel.<sup>5-11</sup> Children older than 2 years may experience a clinical course intermediate between those of infants and adults.<sup>12</sup>

Whereas most intussusceptions in children (48% to 85%) are ileocolic,<sup>2,4</sup> most of those in adults involve the small bowel, with 17% to 52% (average 30%) being colonic.<sup>6-10</sup>

The frequency with which organic disease can be identified as the precipitant of intussusception and the leadpoint of the intussusceptum differs substantially between adults and infants, and is intermediate for children over 2 years of age.<sup>12</sup> In infants an organic cause is found in only 8% to 26% (average about 10%), and Meckel's diverticulum is the most frequent.<sup>2,4</sup> In adults an organic cause is found in 66% to 90% (average about 80%),<sup>5,6,8-10</sup> though there have been small series reported in which idiopathic intussusception constituted 33% to 50% of cases in adults.<sup>7,10</sup> Neoplasms, benign or malignant, cause an average of 60% of cases in adults; another 20% are due to inflammatory lesions, Meckel's diver-

ticulum and more exotic precipitants, such as blunt and penetrating trauma, foreign bodies, appendiceal mucocele, appendiceal invagination and heterotopic pancreatic tissue.<sup>5,6,8</sup>

Among the intussusceptions secondary to neoplasm in adults there are important differences between those in the small and large bowel. Of the cases involving the small bowel, benign neoplasms are found in about 30% and malignant neoplasms in 10% to 25%;<sup>6,8</sup> thus, 55% to 75% of all enteric neoplasms associated with intussusception are benign and 25% to 45% are malignant.<sup>5,6,8</sup> Adenomas, lipomas and fibromas predominate among the benign neoplasms, and adenocarcinomas and soft tissue sarcomas predominate among the malignant neoplasms.<sup>5,6</sup> Melanoma is probably the most common metastasis.<sup>11</sup> Of the cases involving the large bowel, which are less frequent, more are caused by neoplasms: benign neoplasms account for 21% to 38% and malignant neoplasms for 48% to 68%; thus, 27% to 40% of all colonic neoplasms causing intussusception are benign and 60% to 73% are malignant.<sup>5,6,8</sup> Lipomas and adenomas are the most common of the benign neoplasms, and adenocarcinomas are the most common of the malignant.<sup>5,6</sup>

It is because of the frequency of neoplasia that the preferred treatment of intussusception in adults is surgical, usually segmental resection with end-to-end anastomosis, rather than barium enema reduction, as attempted in children.<sup>2,3,8-10</sup>

The case we have reported illustrates the rather nonspecific signs and symptoms of intermittent bowel obstruction seen in adults with intussusception; a barium enema fortuitously demonstrated the nature of the obstruction. Ileocecolic (as in this case) and cecocolic intussusceptions account for about 15% to 25% of intussusceptions in adults, but an abnormal ileocecal valve as a leadpoint is extremely rare.<sup>5,6,8</sup> The only such case previously reported was one of "hypertrophy" of the valve.<sup>5</sup> Our case is more remarkable in view of the relative scarcity of villous adenomas in the right colon; they have been reported as accounting for 0 to 17% of various series of neoplasms in this area, though this figure may be altered as colonoscopic visualization and biopsy of the right colon becomes more frequent.<sup>13</sup> The circumferential growth of the ileocecal adenoma in our patient is a further unusual aspect of the case.

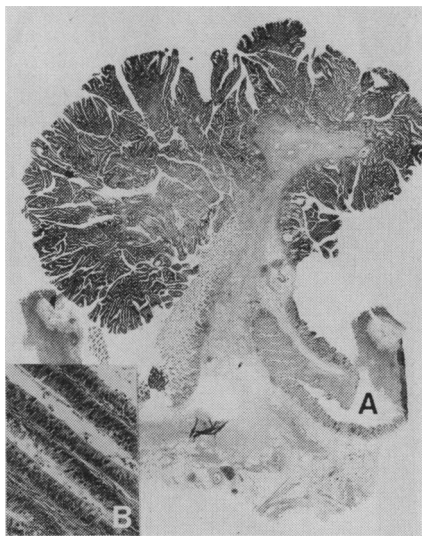


FIG. 4—A: whole-mount cross-section of villous adenoma, with normal ileal mucosa to the left and colonic mucosa to the right (hematoxylin-eosin [H-E]; original magnification  $\times 5$ ). B: slightly dysplastic glandular epithelium forms delicate papillary fronds of adenoma (H-E; original magnification  $\times 60$ ).

## References

- COHN I JR: Intestinal obstruction. In BOCKUS HL (ed): *Gastroenterology*, vol 2, Saunders, Philadelphia, 1976; 483-484
- LARSEN E, MILLER RC: Clinical aspects of intussusception. *Am J Surg* 1972; 124: 69-71

- EIN SH, STEPHENS CA: Intussusception: 354 cases in 10 years. *J Pediatr Surg* 1971; 6: 16-27
- POLLET JE: Intussusception: a study of its surgical management. *Br J Surg* 1980; 67: 213-215
- ROPER A: Intussusception in adults. *Surg Gynecol Obstet* 1956; 103: 267-278
- DONHAUSER JL, KELLY EC: Intussusception in the adult. *Am J Surg* 1950; 79: 673-677
- SMITH IS, GILLESPIE G: Adult intussusception in Glasgow. *Br J Surg* 1968; 55: 925-928
- WEILBAECHER D, BOLIN JA, HEARN D, OGDEN W II: Intussusception in adults. Review of 160 cases. *Am J Surg* 1971; 121: 531-535
- SANDERS GB, HAGAN WH, KINNAIRD DW: Adult intussusception and carcinoma of the colon. *Ann Surg* 1958; 147: 796-804
- HARLAFTIS N, SKANDALAKIS JE, DROULIAS C, GRAY SW, AKIN JT: The pattern of intussusception in adults. *J Med Assoc Ga* 1977; 66: 534-539
- KARAKOUSIS C, HOLYOKE ED, DOUGLASS HO JR: Intussusception as a complication of malignant neoplasm. *Arch Surg* 1974; 109: 515-518
- FALLIS JC: Intussusception in the older child. *Can Med Assoc J* 1976; 114: 38-42
- WELCH JP: Villous adenoma of the cecum: case report. *Milit Med* 1976; 141: 871-873

## BOOKS

This list is an acknowledgement of books received. It does not preclude review at a later date.

**BUTTERWORTHS INTERNATIONAL MEDICAL REVIEWS.** Clinical Pharmacology and Therapeutics 1. Presystemic Drug Elimination. Edited by Charles F. George, David G. Shand and Andrew G. Renwick. 213 pp. Illust. Butterworth & Co. (Publishers) Ltd., London, 1982. \$39.95 (US). ISBN 0-407-02322-4

**CLINICAL RHEUMATOLOGY.** Second Edition. A Problem-Oriented Approach to Diagnosis and Management. Roland W. Moskowitz. 421 pp. Illust. Lea & Febiger, Philadelphia, 1982. \$30. ISBN 0-8121-0847-7

**CLINICAL TOXICOLOGY OF DRUGS: PRINCIPLES AND PRACTICE.** Edited by Vasilios A. Skoutakis. 293 pp. Illust. Lea & Febiger, Philadelphia, 1982. \$30.50. ISBN 0-8121-0807-8

**THE EASTER SEAL GUIDE TO CHILDREN'S ORTHOPAEDICS.** Prevention, Screening and Problem Solving. Mercer Rang. 97 pp. Illust. The Easter Seal Society, Toronto, 1982. \$5, paperbound

**EEG IN CLINICAL PRACTICE.** John R. Hughes. 235 pp. Illust. Butterworth Publishers Inc., Woburn, Massachusetts, 1982. \$19.95 (US). ISBN 0-409-95023-8

**EMERGENCY MEDICAL THERAPY.** Second Edition. Mickey S. Eisenberg and Michael K. Copass. 407 pp. Illust. W.B. Saunders Company Canada, Ltd., Toronto, 1982. \$21.50, spiralbound. ISBN 0-7216-3354-4

**ESTABLISHING A GERIATRIC SERVICE.** Edited by Davis Coakley. 235 pp. Illust. Croom Helm Ltd., London, 1982. £14.95. ISBN 0-7099-0700-1

**THE FERTILITY QUESTION.** Margaret Nofziger. 104 pp. Illust. The Book Publishing Company, Summertown, Tennessee, 1982. \$6.25, paperbound. ISBN 0-913990-43-4

continued on page 435

# BOOKS

continued from page 393

**GENITOURINARY CANCER SURGERY.** Edited by E. David Crawford and Thomas A. Borden. 575 pp. Illust. Lea & Febiger, Philadelphia, 1982. \$118.25. ISBN 0-8121-0812-4

**HUMAN NUTRITION.** Current Issues and Controversies. Edited by A. Neuberger and T.H. Jukes. 249 pp. Illust. Jack K. Burgess, Inc., Englewood, New Jersey, 1982. Price not stated. ISBN 0-937218-37-5

**INDUCED SKELETAL MUSCLE ISCHEMIA IN MAN.** Symposium on Induced Skeletal Muscle Ischemia in Man, Linköping, November 6-7, 1980. Edited by D.H. Lewis. 180 pp. Illust. S. Karger AG, Basel, Switzerland, 1982. \$69 (US), paperbound. ISBN 3-8055-3427-2

**INSTRUCTIONS FOR PATIENTS.** Third Edition. H. Winter Griffith. 395 pp. Illust. W.B. Saunders Company Canada, Ltd., Toronto, 1982. \$44.45, paperbound. ISBN 0-7216-4286-1

**INTENSIVE CARE OF THE SURGICAL PATIENT.** Second edition. Edited by Marshall D. Goldin. 672 pp. Illust. Year Book Medical Publishers, Inc., Chicago, 1981. Price not stated. ISBN 0-8151-3732-X

**INTERPRETING THE MEDICAL LITERATURE.** A Clinician's Guide. Stephen H. Gehlbach. 234 pp. Illust. D.C. Heath Canada Ltd., Toronto, 1982. \$16.25, paperbound. ISBN 0-669-04506-3

**INTRODUCTION TO ORAL IMMUNOLOGY.** A.E. Dolby, D.M. Walker and N. Matthews. 102 pp. Illust. Edward Arnold (Publishers) Ltd., London; W.B. Saunders Company Canada, Ltd., Toronto, 1981. \$15.15, paperbound. ISBN 0-7216-3130-4

**LAENNEC 1781-1826.** Commémoration du Bicentenaire de la Naissance de Laennec 1781-1826. Colloque organisé au Collège de France les 18 et 19 février 1981. Revue de Palais de la Découverte. Numéro Spécial 22 — août 1981. Rédigé par A. Jean Rose et Charles Penel. 345 pp. Illust. Palais de la Découverte, Paris, 1981. Prix non mentionné. ISBN 85607

**MAJOR PROBLEMS IN CLINICAL PEDIATRICS.** Vol. VII. Recognizable Patterns of Human Malformation. Third Edition. David W. Smith. 653 pp. Illust. W.B. Saunders Company Canada, Ltd., Toronto, 1982. \$50.15. ISBN 0-7216-8381-9

**MCQ TUTOR FOR STUDENTS OF PATHOLOGY.** Second Series. Multiple Choice Questions. Bernard Lennox. 156 pp. William Heinemann Medical Books Ltd., London, 1981. £5.75, paperbound. ISBN 0-433-19152-X

**NORMAN BETHUNE,** His Times and His Legacy/Son Epoque et Son Message. Edited by David A.E. Shephard and Andrée Lévesque for the Bethune Foundation. 253 pp. Illust. Canadian Public Health Association, Ottawa, 1982. \$11.50, paperbound. ISBN 0-919245-11-0

**OPTIMIZATION OF DRUG DELIVERY.** Proceedings of the Alfred Benzon Symposium 17 held at the premises of the Royal Danish Academy of Sciences and Letters, Copenhagen 31 May-4 June 1981. Edited by Hans Bundgaard, Ann Bagger Hansen and Helmer Kofod. 435 pp. Illust. Munksgaard International Publishers Ltd., Copenhagen, 1982. Price not stated. ISBN 87-16-08979-0

**RESEARCH ISSUES IN AGING.** Report of a Conference, 1980. Edited by Ronald Bayne and Blossom Wigdor. 142 pp. Illust. Gerontology Research Council of Ontario, Hamilton, Ont., 1982. \$4.50, paperbound. ISBN 0-9691020-0-3

**SOCIAL PSYCHOLOGY AND MEDICINE.** M. Robin DiMatteo and Howard S. Friedman. 349 pp. Illust. Oelgeschlager, Gunn & Hain, Publishers, Inc., Cambridge, Massachusetts, 1982. \$25 (US). ISBN 0-89946-131-X

**WATER AND ELECTROLYTES IN PEDIATRICS.** Physiology, Pathophysiology and Treatment. Laurence Finberg, Richard E. Kravath and Alan R. Fleischman. 251 pp. Illust. W.B. Saunders Company Canada Limited, Toronto, 1982. \$47.60. ISBN 0-7216-3625-X

## THERAPEUTIC SECTION AND INDEX

### Analgesic

Tylenol 407, 436

### Anorectal Therapy

Anusol-HC 416

### Antibacterial

Bactrim 352, 439

### Antibiotic

Amoxil 415  
Cecilor 348, 436

### Anti (GI)

Tagamet 439, Inside Front Cover

### Antihistaminic

Actifed 346

### Antihypertensive

Blocadren 424, 425, 426, 427  
Inderal LA 350, 351, 438  
Minipress 373, 374, 375, 376  
Trasicor 430, Outside Back Cover  
Visken 402, 403, 404

### Anti-inflammatory

Feldene 361, 362, 363, 364  
Orudis 394, 395, 421

### Anxiolytic

Xanax 437, 448, Inside Back Cover

### Bronchodilator

Cholel 356, 357, 437

### Coronary Vasodilator

Persantine 387, 388, 435

### Topical Corticosteroid

Topicort 418, 436

# Persantine®

dipyridamole

## BRIEF PRESCRIBING INFORMATION

### THERAPEUTIC OR PHARMACOLOGICAL CLASSIFICATION

1. Coronary vasodilator
2. Inhibitor of platelet adhesion and aggregation

### INDICATIONS AND CLINICAL USES

**Coronary Artery Disease** Combined therapy with Persantine and ASA is indicated in patients who are recovering from a myocardial infarction. The rate of reinfarction is significantly reduced by such therapy.

**Thrombo-embolic Disease** Persantine is indicated for the prevention of post-operative thromboembolic complications associated with prosthetic heart valves.

**Chronic Angina Pectoris** Persantine (dipyridamole) has been used successfully in the long-term treatment of a variety of clinical conditions caused by decreased coronary flow. In chronic angina pectoris, dipyridamole may often eliminate or reduce the frequency of anginal attacks and improve exercise tolerance, as well as lessen nitroglycerin requirements. Dipyridamole is not intended to abort the acute anginal attack.

Patients recuperating after the acute phase of myocardial infarction may benefit from the coronary dilating effect of dipyridamole and its potential ability to improve collateral circulation in the myocardium.

In therapeutic doses, dipyridamole does not produce a fall in blood pressure or an increase in heart rate. However, in the acute phase of myocardial infarction the blood pressure may be quite labile and the possible hazards of dipyridamole under these conditions have not been fully evaluated. Dipyridamole is not recommended, therefore, in the treatment of acute myocardial infarction.

### CONTRAINDICATIONS

No specific contraindications are known.

### PRECAUTIONS

Since excessive doses can produce peripheral vasodilation, Persantine should be used with caution in patients with hypotension.

### ADVERSE EFFECTS

At the doses recommended for angina pectoris, the adverse reactions are minimal and transient. Occasionally headache, dizziness, nausea, flushing, syncope or weakness, skin rash has occurred during initiation of therapy. Mild occasional gastric distress can be avoided by administration of the tablets with a glass of milk. Gastric irritation, emesis and abdominal cramping may occur at high dosage levels. Rare cases of what appears to be an aggravation of angina pectoris have been reported, usually at the initiation of therapy. On those uncommon occasions when adverse reactions have been persistent, or intolerable to the patient, withdrawal of the medication has been followed promptly by cessation of the undesirable symptoms.

When Persantine is used in combination with ASA for the secondary prevention of myocardial infarction, the only side effect clearly attributable to Persantine is headache. This symptom shows an increase of 5.5% in the combination treated group over that occurring in a group of patients treated with ASA alone. Other adverse reactions which occur during combination therapy are similar to those mentioned above together with the well documented side effects of ASA therapy, notably gastric distress and gastrointestinal bleeding.

At the higher doses of Persantine recommended for use in patients with artificial heart valves, there may be an increase in the incidence of adverse reactions.

### SYMPTOMS AND TREATMENT OF OVERDOSAGE

Hypotension, if it occurs, is likely to be of short duration but vasopressor substances may be used if necessary.

### DOSAGE AND ADMINISTRATION

**Coronary Artery Disease** The recommended oral dose is 75 mg of Persantine together with 324 mg of ASA, three times a day, in patients who have suffered a previous acute myocardial infarction.

**Thrombo-embolic Disease** The recommended oral dose is 100 mg q.i.d. one hour before meals. A lower dose of 100 mg of Persantine daily together with 1 g of ASA daily, prolongs platelet survival to the same extent.

**Chronic Angina Pectoris** The recommended oral dose is 50 mg t.i.d., taken at least one hour before meals. In some cases higher doses may be necessary. Clinical response is gradual, reaching a maximum effect within three months of uninterrupted therapy.

### AVAILABILITY

1. 25 mg tablet: An orange, round sugar-coated tablet, imprinted with the Ingelheim tower.

2. 50 mg tablet: A coral, round sugar-coated tablet, imprinted with the Ingelheim tower.

3. 75 mg tablet: A red, round sugar-coated tablet, imprinted with the Ingelheim tower.

Persantine 25 mg and 50 mg are supplied in bottles of 100 and 500 tablets.

Persantine 75 mg is supplied in bottles of 100 tablets.

Persantine Product Monograph available on request.



**Boehringer  
Ingelheim**

Boehringer Ingelheim (Canada) Ltd./Ltée.  
977 Century Drive, Burlington, Ontario L7L 5J8